

Application No. 10/609,161
Response to Final Office Action

Customer No. 01933

Listing of Claims:

Claims 1-8 (Canceled).

9. (Currently Amended) A swing control apparatus for a swingable hydraulic shovel including an upper revolving superstructure, a work implement having a base end portion which is attached to a front end portion of the upper revolving
5 superstructure with at least one swing pin to be laterally swingable, and swing drive means for swingably driving the ~~working work~~ implement, said swing control apparatus comprising:

a swing angle detector for detecting a swing angle of the work implement;

10 swing speed detecting means for detecting a swing speed of the working machine based on a swing angle signal output by the swing angle detector; and

a controller for outputting a speed reduction command to reduce the swing speed gradually from a speed reduction starting position at an angle short of a stroke end of a swing to the
15 stroke end; ~~when the swing angle detector detects that the swing angle corresponds to the speed reduction starting position~~

wherein the swing speed reduction starting position is determined based on the swing speed detected by the swing speed
20 detecting means; and

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wherein the controller outputs the speed reduction command when the swing angle detector detects that the swing angle corresponds to the speed reduction starting position.

10. (Previously Presented) The swing control apparatus for the swing type hydraulic shovel according to claim 9, wherein the at least one swing pin comprises an upper swing pin and a lower swing pin which are separated; and

5 wherein the swing angle detector is provided to extend continuously from a lower end portion of the upper swing pin.

11. (Previously Presented) The swing control apparatus for the swing type hydraulic shovel according to claim 9, wherein the swing drive means comprises a hydraulic actuator;

wherein the swing control apparatus further comprises:

5 an operation valve for controlling a flow rate of pressure oil supplied to the hydraulic actuator in accordance with an operation signal; and

proportional electromagnetic valves adapted to control a pilot pressure for operating the operation valve; and

10 wherein the controller outputs the speed reduction command of the swing speed to at least one of the proportional electromagnetic valves to control a flow rate of the operation valve.

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12. (Previously Presented) The swing control apparatus for the swing type hydraulic shovel according to claim 11, wherein the at least one swing pin comprises an upper swing pin and a lower swing pin which are separated; and

5 wherein the swing angle detector is provided to extend continuously from a lower end portion of the upper swing pin.

Claims 13-16 (Canceled).